

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently amended) A process for purification of styrene or vinyl toluene ~~an aromatic monomer such as~~ is produced by catalytic dehydrogenation of an alkylated aromatic compound which process comprises:

providing a feedstock comprising styrene or vinyl toluene ~~at least one substituted aromatic monomer of from 8 to about 18 carbon atoms in which a substituent moiety is ethylenically unsaturated~~ and impurities comprising phenylacetylene or tolylacetylene ~~at least one substituted aromatic compound having the same or similar carbon content in which a substituent moiety is acetylenically unsaturated~~ in an amount of more than about 100 to about 1000 parts per million based upon the total amount of aromatic monomer present and optionally saturated hydrocarbon compounds;

passing at a liquid hourly space velocity in a range of from about 0.5 hour⁻¹ to about 50 hour⁻¹ the feedstock through a particulate bed of adsorbent comprising predominantly a support material selected from the group consisting of alumina, silica, active carbon, clay and zeolites having high surface area in the range of from about 10 to about 2000 square meters per gram as measured by the BET method and on which is dispersed at least one metallic element in the zero valent state selected from the group consisting of ~~chromium~~, iron, cobalt, nickel, copper, ruthenium, palladium, silver and platinum, having a dispersed metal content in the range of from about 0.01 to about 10.0 percent based on the total weight of the adsorbent and having a metal dispersion value of at least 10 percent as measured by the carbon monoxide chemisorption method, ~~to effect~~, under conditions suitable for adsorption within the bed, to effect, in the presence of an essentially dihydrogen-free atmosphere within the bed, selective adsorption and/or complexing of the contained impurities with the adsorbent, and thereby obtain purified effluent which contains less than about 10 to 400 parts per million of the phenylacetylene or tolylacetylene impurity ~~acetylenically unsaturated impurity~~;

wherein the feedstock contains less than about 0.5 part per million by volume of hydrogen and less than about 1 part per million by volume of mercury-containing.

arsenic-containing, and sulfur-containing components, each calculated as the element, and wherein the feedstock, while passing through the bed, is at temperatures in a range of from about 5°C to about 75°C; and

thereafter regenerating the resulting bed of adsorbent in the presence of a reducing gas comprising dihydrogen to effect release of the contained impurities from the adsorbent.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Original) The process according to claim 1 wherein the adsorbent comprises at least about 90 weight percent of a gamma alumina having surface area in a range of from about 80 to about 500 square meters per gram as measured by the BET gas adsorption method.

7. (Currently amended) The process according to claim 6 wherein the metal dispersed on the support material is palladium, ~~and the adsorbent has a palladium content in a range of from about 0.01 to about 10 percent based on the total weight of the adsorbent~~.

8. (Cancelled)

9. (Currently amended) The process according to Claim 1 & wherein the adsorbent comprises at least about 90 weight percent of a gamma alumina having surface area in a range of from about 150 to about 350 square meters per gram as measured by the BET gas adsorption method, and wherein the metal dispersed on the support material is palladium, and the adsorbent has a palladium content in a range of from about 0.01 to about 10 percent based on the total weight of the adsorbent.

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)
14. (Cancelled)
15. (Cancelled)
16. (Cancelled)
17. (Cancelled)
18. (Cancelled)
19. (Cancelled)
20. (Cancelled)